



LEONIE OAKES

# SULFUR

Element Symbol: **S**

Atomic Number: **16**

An initiative of IYC 2011 brought to you by the RACI



International Year of  
**CHEMISTRY**  
2011



[www.raci.org.au](http://www.raci.org.au)

# SULFUR

**Element symbol:** S

**Atomic number:** 16

The word sulfur is Latin for burning stone and was used almost interchangeably with the term for fire. The middle English word, sulfre, means brimstone. Sulfur is present throughout the universe – the colours of Jupiter’s volcanic moon, Io, are due to solid, molten and gaseous sulfur. It is also present in many types of meteorites.

On Earth, elemental sulfur is usually associated with hot springs and volcanic areas.

Sulfur was used by pagan priests centuries before Christianity. It was burned as a medicine, fumigant and bleaching agents. It was also used as incense in religious rites. Pliny (23-27 AD) called it the “most singular kind of earth and a agent of great power on other substances”.

The combustibility of sulfur was used in pyrotechnical displays associated with the Roman circus. It was also the Romans that experimented with sulfur and other combustible materials, resulting in the production of incendiary weapons. While this knowledge was lost, the returning Crusaders brought gunpowder that was developed by the Chinese during the time of Confucius.

The most important sulfur-containing compound is sulfuric acid. World production in 2001 was 165 million tons, with an approximate value of US\$8 billion. The principle uses of sulfuric acid include lead-acid batteries for cars, ore processing, fertiliser manufacturing, oil refining, wastewater processing, and chemical synthesis.

Sulfur also has an important biological role. It is an essential element for life and is found in two amino acids: cysteine and methionine. Disulfide bonds (S-S) formed between cysteine residues in peptide chains are important in protein assembly and structure and gives extra toughness and rigidity. Feather formation requires significant amounts of sulfur, which explains the high level of sulfur in eggs, and the characteristic smell of rotten eggs due to the release of hydrogen sulfide.

Sulfur – the gardener’s friend

*Provided by the element sponsor sponsor Vicki Gardiner*

## ARTISTS DESCRIPTION

The first layer of the print Sulfur responds to the element’s gassy association to the smell of rotten eggs. The copper plate was etched and printed with the classic acidic yellow of sulfur. The second layer of print involved a traditional process of letterpress in red.

The association of fire in the word’s origin provided the colour pallet. The third and final embossed layer was inspired by the chemists’ last note of information about the element as being, “Sulfur, the gardeners friend”.

For an element I had only associated with slight distain and revolt before researching it, the notion of a beautiful gardener’s friend made me smile.

**LEONIE OAKES**